AirGoggle NVC910

Network Speed Dome Camera

User Manual

Directions

NVC 910 series network cameras are designed for outdoor/indoor use. Don't use NVC 910 in an environment that exceeds the limited range.
Be careful not to cause any physical damage by dropping or throwing the NVC 910 network camera. Especially keep the network camera out of reach from children.

Do not disassemble NVC 910 or After Service Follow-up is not possible.

Use only the AC power adapter which conforms to the specification in data sheet or optionally provided DC power adapter with the NVC 910.

If you would like to use the NVC 910 for security, monitoring, please check the legal regulations within the country.

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, use and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into and outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Warning & Caution

If you fail to read this information and handle the product incorrectly, death or serious injury may occur.

The unit should be installed by trained personnel.

Always stop using when the product emits smoke or abnormal heat.

Never install the product in area exposed to water, oil or gas.

Never install the product on a ceiling that cannot hold its weight.

Never touch the power cord with wet hands.

Clean only with dry cloth.

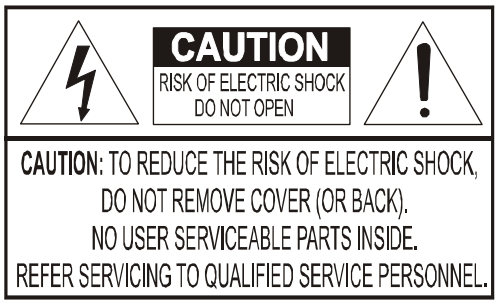
Never install the product in extremely high or low temperature.

Never drop, hit strongly nor vibrate the product.

Never expose the product to direct sunlight or severe ray.

Never touch the front glass of the product.

Never install the product in areas exposed to rain or water


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that can cause electric shock..

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Additional Warning & Caution for NVC 910

Never move Pan/Tilt by hands. It may causes serious damage to the camera.

Input power:	With Camera - 24V AC
	18 watts at 24V AC
Heater:	18watts
Fan:	2watts

The heater activates at +10℃ (±5℃),
deactivates at +15℃(±5℃)
The fan activates at +45℃ (±5℃),
Deactivates at +35℃ (±5℃)

Revision History

Date	Rev. No	Description
2007-12-17	0.1	Creation of the document

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1. Introduction

1.1. Overview

The NVC 910 is a state-of-the-art Speed Dome network camera which transmits synchronized video and audio data in real time with D1 resolution at full frame rate. This is possible through MPEG4 CODEC technology, which provides high quality video with highly compressed data streams. The NVC 910 can be connected, controlled and monitored from a remote location through an IP connection over internet or intranet. Unlike CCTV or DVR, the NVC 910 is easy to install and owner will experience cost and space savings in the installation owing to the state of the art technologies embedded in the system. Based on Embedded Software Solution (Embedded Web Server, Embedded Streaming Server, Network Protocol), the NVC 910 ensures unprecedented performance and stability to be an ideal network camera solution for system integration solutions. NVC 910 is offered with standard Ethernet interface.

1.2. Features of NVC 910

- **Vandal proof mini speed dome X Zoom**
- 1 channel synchronized real time Video/Audio streaming **MPEG-4 video, ADPCM audio**.
- Bi-directional audio communication

  Real time audio communication between NVC 910 and Client PC
- The viewer assisted **recording and playback functions**
- **Filter Changeable Type Day & Night**
- **IP66 water-resistant**
- **100x Zoom(10x Optical with 10x Digital zoom)**
- **350 degree continuous rotation**
- **Clear image of 530TV line(B/W:580TV line)**
- **Noiseless low light image with SDNR**
- **Day&Night with ICR**
- **Max. 200 degree/sec Pan & Tilt speed**
- **Max 30 frames/sec(NTSC) and Max 25frames/sec(PAL) @ D1 resolution**
- **Full D1 Resolution with De-interlaced filter**
- **Versatile PTZ control**

  Client viewer assisted PTZ control,

  Dedicated virtual system controller for PTZ control on the client

  Simultaneous connection & control over IP and RS485
- **4 Alarm sensor inputs / 2 relay outputs**

- **Motion detection – Up to 3 motion detection zones. Arbitrary shape motion detection zone**
  Motion detection can initiate video recording, which is sent to the user through FTP and/or E-mail.
- **Resolution**
  - NTSC : 704x480, 352x240, 176x144. - PAL/SECAM : 704x576, 352x288, 176x144
- **Remote administration control**
  Entire operational parameter set up, Software upgrade

• Detailed Features of Speed Dome part

100X Zoom Mini Speed Dome

10X Optical Zoom with 10X digital zoom

±0.02° dome system accuracy with 1/4 micro step

By adopting 1/4 micro step and twin gear system, the dome camera achieved 0.1° rotational accuracy. It provides excellent precision for delicate control such as preset positions.

360° Endless Rotation

Preset position compensation

It minimizes the effect of low frequency vibration caused by wind or other impact for maintaining precise positioning. It is useful for outdoor surveillance and traffic monitoring applications.

Over 200°/Sec Preset Speed

The 360° full pan function moves through a maximum of 200°/sec., enabling you to quickly pinpoint the spot you want to watch. Tilt speed provides through a maximum 200°/sec on preset.

Polarity Protection of Power (DC12V)

This protection function prevents the power board from being out and trouble when power source falsely connects to the power terminals.

Protected RS485 terminals. (Against misconnection of the power line)

RS-485 circuit is protected against false connection of the power source for ensured communication channel.

Filter changeable True Day/Night(ICR Block Filter)

Automatic IR cut filter ensures near-true color video for day time while providing quality B/W video under low illumination. The efficiency of the monitoring can be improved by using this feature used together with DSS (Digital Slow Shutter).

Indoor / Outdoor applications

Compact and minimize dome size provides various install application to big shop, shopping center, airport, highway and so on.

Aluminum case and PC cover(IP66)

Elegance designed aluminum body and Poly Carbonated dome cover prevent weather proofed install environment (IP66 Rated)

Hot Keys

This camera supports various hot key functions for ease of control by other controllers or DVRs.

Various Surveillance Functions

Auto Scan continuously repeats movement between two preset positions with various speed and dwell time.

8 Group Tour : Up to 8 Programmable Group tours are supported. Each group can be configured to have up to 60 preset positions with different speed and dwell time

165 Preset positions : Up to 165 programmable preset positions. Each preset position can be labeled by up to 16 characters

8 Patterns : up to 8 user-defined patterns. Each pattern can last up to 60 seconds and can be named with up to 16 characters. Total of 480 second of pattern monitoring is possible.

8 Sectors : Up to 8 user-defined sectors. Each sector can be labeled by up to 16 characters

4 Privacy Masking Zones : Up to 4 user-defined privacy masking zone. Each zone can be labeled by up to 16 characters

2 Alarm input and 1 relay out : 2 alarm inputs and 1 relay outputs that can be matched with preset, tours, and patterns for versatile monitoring functions.

High speed Pan & Tilt movement

Maximum speed for the panning and tilting are 350° /sec and 250° /sec, respectively, for preset movement. The high speed will enable quick movement to the spot you want to watch..

150°/S – Manual Operation speed

This camera provides up to 150°/sec of manual speed and it's adjustable from 100°/sec to 150°/sec

1/4" Sony Super HAD CCD

Sony Super HAD CCD for excellent sensitivity and low smear levels.

Multiple language support

Intelligent Pan/Tilt Controlling

Pan and tilt speed is adjusted in connection with zoom factor.

1.3. Applications of NVC 910

- IP surveillance (buildings, stores, manufacturing facilities, parking lots, banks, government facilities, military, etc.,
- Real time Internet broadcasting
- Remote monitoring (hospitals, kindergartens, traffic, public areas, etc.,)
- Teleconference (Bi-directional audio conference)
- Remote Learning
- Weather and environmental observation

2. Product Description

2.1. Package Contents

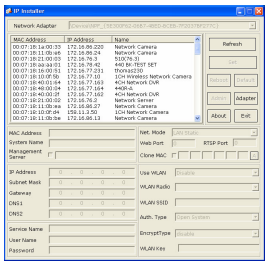
Open the package and check if you have the followings:

1. Camera main body
2. CD(Manual, S/W)
3. Screw (Ø 4x16 screw 5EA,
   Ø4x16 screw 5EA)
4. Manual
5. Terminal Block (5Pin 2EA)
6. Power Supply

Optional

1. Wall Mount Bracket
2. PoE

2.2. Preview

NVC 910	IP-Installer	NVR100 & Virtual System Controller
		

MPEG-4 Speed Dome Network Camera	PC software to allocate IP parameters to NVC 910	PC software to view and record the A/V streaming data transmitted from NVC 910

2.3. PC Requirements

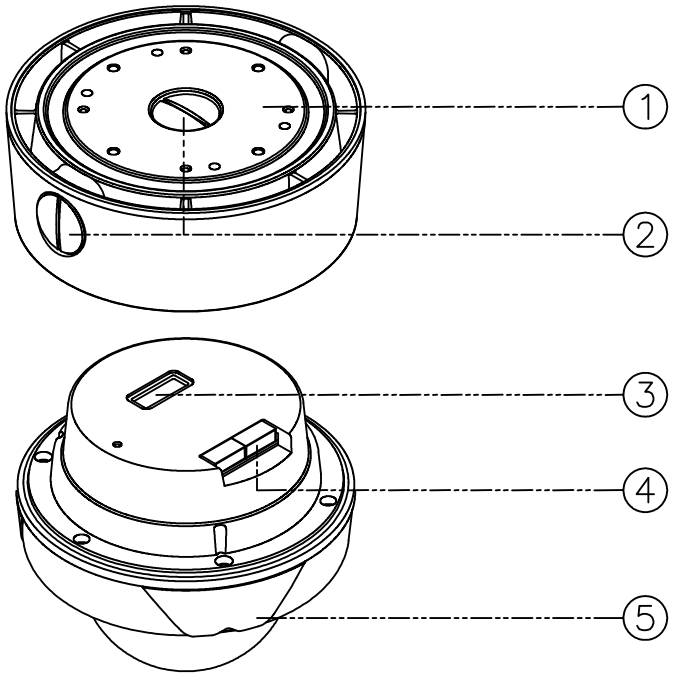
AV streaming data received from NVC 910 can be decoded or stored in a PC running NVR100 program which is a viewing & recording program for a PC. Minimum requirement of the PC is described below:

	Recommended
CPU	Pentium IV 1.8G above
Main Memory	512MB above
Operating system*	Windows 2000 or later
Web browser	Internet Explorer 6.0 above
Resolution	1280 X 1024
Network	100 Base-T Ethernet

* Operating Systems supported : Windows 2000 Professional
Windows XP Professional / Windows XP Home Edition

2.4. Physical description

2.4.1 Bottom View and Name



1. Surface Mount Adaptor
2. Cap Screw (PT3/4 , 2EA)
3. Dip Switch
4. Terminal Block
5. Main body

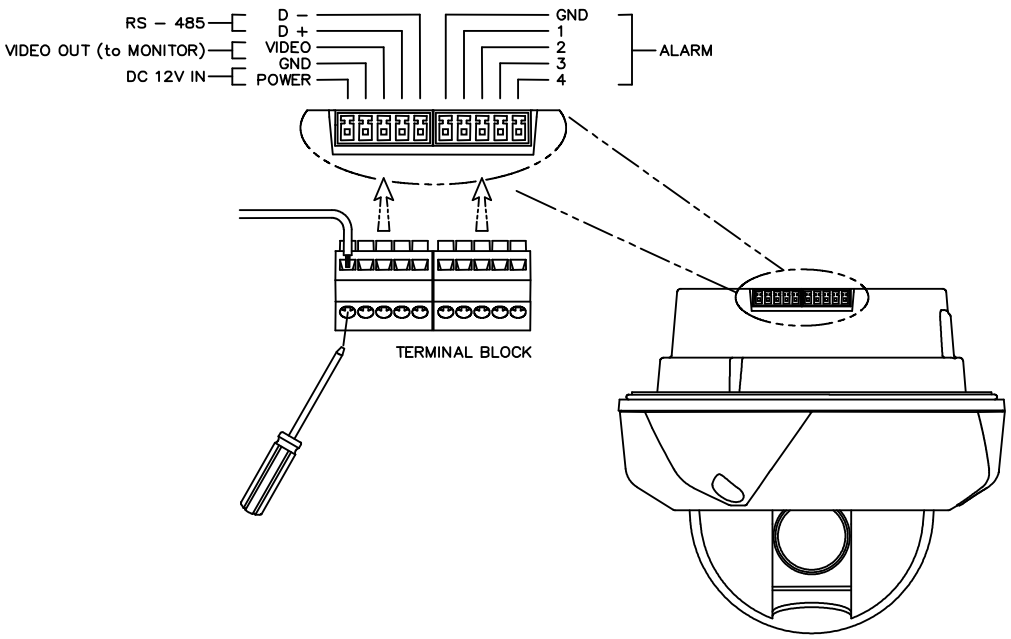


Fig.2-1 detailed view of NVC 910

Connector Name	Description
ALARM	. 2 Alarm inputs(Signal pin number : 1, 2), 1GND(ground) signals . Connect external alarm sensors such as the infrared, heat, magnetic sensor to network camera. . Sensor type(Normal Open or Normal Close) can be selected using Virtual System Controller (Keyboard Emulator) in NVR100 (for detailed information, please refer to the NVR100 user's guide in CD)
AUX	. 1 Relay outputs and 1 ground (GND) signal . Connect external alarm generators such as sirens, flashing light, etc., to network camera. Please refer to the section 6.1 for more detailed description.
NETWORK	. RJ45 connector, 100Base-T. . Connects NVC 910 to IP network
RS485	. Connect external device such as System Controller (Keyboard) or DVR to NVC

	910 network camera
VIDEO OUT	. Composite video output from the camera.,
LINE OUT	. Connect a speaker with amplifier. . Audio/voice from client at remote site can be output through the line out terminal in bi-directional audio mode of NVR100 or NVM 1000.
MIC/LINE IN	. Connect external Microphone or audio to network camera. Input audio/voice is compressed in network camera for synchronized transmission with video to client PC through IP network
DC12V	. Connect 12 Volt DC adaptor to this terminal for supplying power to the network camera. **. AC adapter which is compliant to the specification for NVC 910 should be used. Misuse of power supply can cause damage to NVC 910.** **INSCAPE DATA assumes no responsibility for misuse of the power supply.**

2.4.2 Dimension and basic parts of NVC 910

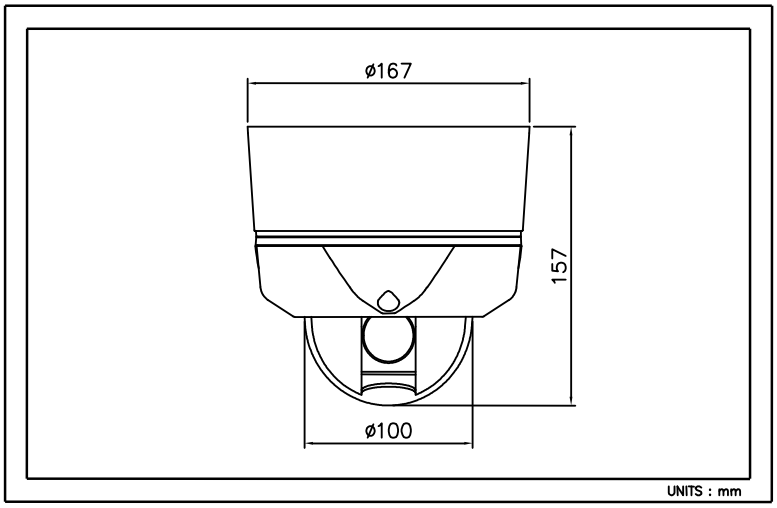


Fig 2.2 Dimension of NVC 910 (unit : mm)

2.5. Specification of the analog camera module

2.5.1. Zoom camera

Camera module	Lens	Misc.
10X Zoom	Zoom Camera	PAL or NTSC

2.5.2 Detailed specifications

			10X A/F CAMERA MODULE
Pan/Tilt	**Pan Rotation Angle**		360˚ Endless
	Pan Speed	**Manual**	100˚ ~ 150˚/sec
		Preset	Max 200˚ /sec
	Tilt Rotation Angle		0˚ ~ 90˚
	Tilt Speed	**Manual**	100˚ ~ 150˚/sec
		Preset	Max 200˚ /sec
	Rotational Resolution		0.02˚
Functions	**Preset**		165 positions identifiable with 16 character label. Different speed steps
	Group Tour		Max. 8 Programmable group tours (each one consisting of up to 60 preset steps with different steps)
	Auto scan		Programmable Auto scan
	Pattern		8 Programmable Patterns (total 480 seconds)
	Privacy Zone		4 privacy zones
	Sector		8 Sectors identifiable with 16 character label.
	Password Protection		Yes
	Alarm Input		2 alarms (OFF/NC/NO selectable)
	Alarm Actions		Activate preset, Group scanning or output on alarm input
	Aux Output		1 Replay Outputs
	Auto Flip		ON / OFF
	OSD Menu		Multiple Languages support
	Communication		RS-485
	Protocol		Pelco-D/P
Power	**Consumption(12V DC)**		9W Max (Heater Type 15W)
	Consumption(24V AC)		18W Max (Heater Type 30W)
	Power Supply(12V DC)		DC12V 750mA (Heater Type DC12V 1.2W)
	Power Supply(24V AC)		AC24V 650mA (Heater Type AC24V 1.3W)

Others	**Construction**		die-casting , Anti-vandal dome cover
	Dimensions		158.8φ (D) * 163.0mm(H)
	Weight		1.5 kg
	Motor Type		Stepping Motor
	Micro Steps		1/4 Micro Step
	Storage Temperature		-10□ ~ 60□
	Operating Temperature		0□ ~ 50□
	Certifications		CE, FCC
Camera Module	**Image Sensor**		1/4"Sony super HAD CCD
	Number of Pixels	**NTSC**	811(H) * 508(V) 410K
		PAL	795(H) * 596(V) 470K
	Number Of Effective Pixels	**NTSC**	768(H) * 494(V) 380K
		PAL	752(H) * 582(V) 440K
	Horizontal resolution		More Than 500TV Lines
	Zoom	**Optical**	10x Optical Zoom (F=3.8 to 38mm)
		Digital	10x (100x with optical)
	Day & Night (ICR)		Auto/ Day/ Night
	Minimum Shooting Distance		0.35m(Wide)/0.8m(Tele)
	Digital Slow Shutter		2/4/8/16/24/32/64/128/ OFF
	Min. illumination	**Normal mode**	0.7Lux (50IRE)
		Night mode	0.02Lux (ICR On)
	Luminance S/N Ratio		More than 50dB
	Video Output		VBS:1.0Vp-p / 75Ohm
	BLC		ON / OFF
	Flickerless	**NTSC**	ON / OFF (1/100)
		PAL	ON / OFF (1/120)
	White balance		AWB/ATW/INDOOR/ OUTDOOR

2.6. Quick Installation Guide

Brief information for rapid installation is provided in this section. For more detailed information you are recommended to refer to pertinent documentations provided with the product or refer to Inscape Data's home page **(http://www.Inscape Data.com)**

1. **Apply power to NVC 910 and Connect NVC 910 to LAN like the following picture.**

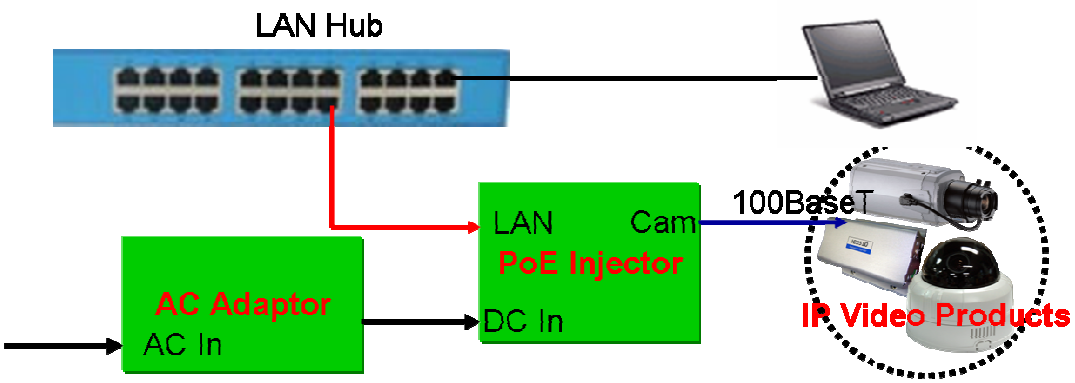


Fig. 2-5 Connecting Network camera and PC

2. **Install "IP installer" and "NVR100" on your PC.**
   Detailed information for installing these programs can be found in **[IP-Installer User's Guide]** and **[NVR100 User's Guide],** respectively.

3. **Assign IP address to NVC 910 using IP installer.**
   Identify the type of the network environment and set up IP address. Detailed process of setting up IP address can be found in **[IP-Installer User's Guide]**. If network type is xDSL or Cable modem you need supplementary information provided by your ISP.

4. **Connect to NVC 910 in Administrator Mode for initial parameter set-up.**
   All parameters are set to factory default state when NVC 910 is delivered. You are asked to configure the system for your environment in administration mode. Detailed information of using administration mode can be found in **[5. Configuring NVC 910 in Administrative Mode]**. Among the parameters, the parameters in the following table should be set-up with proper values. Detailed information for the parameters in Administrator Mode is found in **[5. Configuring NVC 910 in Administrative Mode]**

[Note]: Set-up values are preserved even the power is turned off.

Page	Parameter	Setup value	Factory default value
Basic Setup	Video Size	Set the resolution of the video transmitted from NVC 910.	Make sure that you press Check button to find out the number of maximum possible simultaneous users then set the number of users smaller than or equal to the number.
	Max Upload Rate	Set this value smaller than the upload speed of your network.	
	Frame Rate	The number of frames to be transmitted per second.	
	Video Rate	Bandwidth assigned for video transmitted from NVC 910.	
User Admin & Time Setup	Administrator name & password	For safety, you are recommended to change these values from factory default. For new connection, you need to input changed values for corresponding fields. Do not disclose these values to others and memorize these values.	Default value User name : root Password : root
User Admin & Time Setup	Current Time	Input correct time in this field.	Default value : 2001/1/1

5. Connect the input and output signals to NVC 910.

Connectors	Function	Signal description	Number
Mic/LINE-In	Audio/Voice in	Connect microphone or output from audio devices.	1
Line Out	Audio out for speaker	Audio from remote site is available from this connector in bi-directional audio mode. Connect speaker with amplifier.	1
Alarm /Aux	Connecting Alarm Sensor	IR sensor, Motion Sensor, Smoke Detector…	1
	Connecting Alarm annunciating device	Siren, Flashing Light, …	1
Network	Network connection	Connect NVC 910 to the network, LAN,	1

		ADSL or Cable modem.	
DC12V	Supply DC power	Apply DC12V power to network camera	1

6. Remote video connection to NVC 910

Run NVR100 on your PC. Before connecting to NVC 910 it is needed to configure the connection information on the NVR100. More detailed information of using "NVR100" can be found in [NVR100 User's Guide].

3. Connecting NVC 910 to IP Network

NVC 910 supports LAN, xDSL, and Cable modem. It also supports shared IP environment where single IP address is shared by at least 2 IP devices. Refer to **[IP-Installer User's Guide]** for details of setting the IP address for NVC 910.

3.1. Connecting to LAN

In case of connecting the NVC 910 to LAN, it is generally connected as in Fig. 3-1.

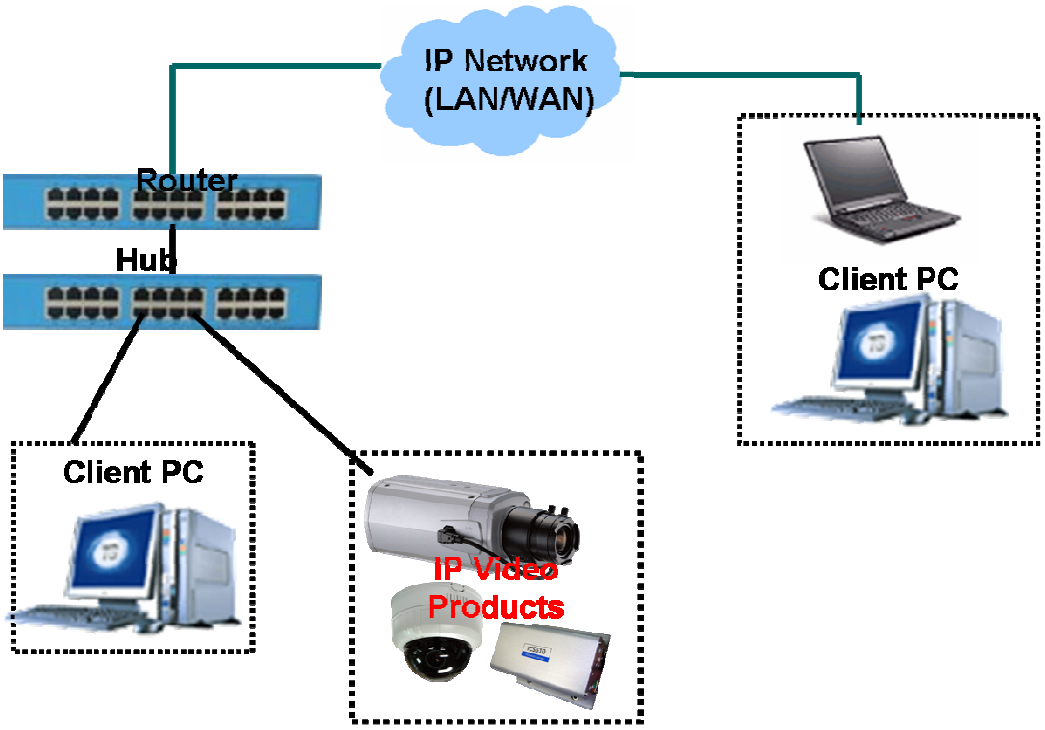


Fig. 3-1 Connecting NVC 910 to LAN

1. Follow through steps 1 to 3 in Section 2.6 to assign IP address to NVC 910.
2. Check if you can receive video data when connecting to NVC 910 using the viewer program.
4. When one or more IP video products are connected through a IP sharing device (i.e. router) to a larger network (i.e. the internet), in order to access each unit from outside the local area network, each device must have a unique RTSP (Real Time Stream Protocol) and HTTP port number. You must also conFig. your IP sharing device for "port forwarding". This is to enable the IP sharing device to forward packet data with unique port number (RTSP and HTTP) to unique internal IP address (local IP address). If you only plan to access multiple units from within a local area network, you do not need to change the RTSP and HTTP port numbers, unless

other IP sharing devices sit in-between the client and the IP video products. For more detailed information regarding the use of IP sharing device refer to the document **[Use of Private IP network using IP-sharing-device]**.

3.2. Connecting to xDSL/Cable Modem

1. Please connect NVC 910 to PC through Hub and then connect DC power adapter.
2. Install IP-Installer and NVR100 S/W on PC
3. Using IP Installer S/W, set up some parameters for communication through IP network
   Please refer to the IP installer and NVR100 user's guide.
4. Connect NVC 910 with ADSL/Cable Modem as Fig.3.2
5. Run NVR100 program and check if you can receive video data when connecting to NVC 910.

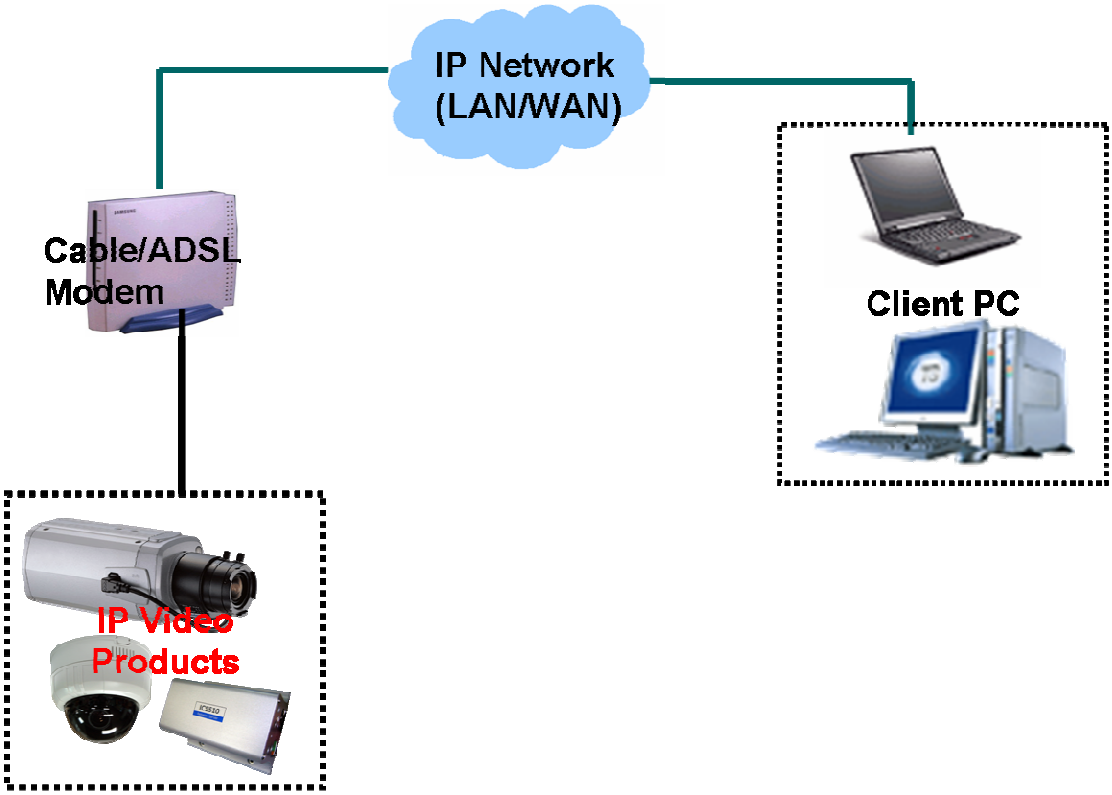


Fig. 3-2 Connecting NVC 910 to ADSL/Cable Modem

When fixed IP address is assigned to the xDSL or Cable modem, follow the same way as assigning IP address for the case of LAN using IP-installer. To enable the notification of the changed IP address to the

user over e-mail when the IP address is changed in floating IP environment, you have to assign the e-mail address when user name and password are input using IP-installer. **(Management server provides a convenient way of connecting to your network camera under dynamic IP environment. Please refer to the Application note regarding "Management Server" in the CD.)**

When connecting NVC 910 to xDSL or Cable modem, usually regular LAN cable is required. But since some modems have crossover connections, please contact your service provider for detailed information.

4. IP-Installer

NVC 910 needs IP network parameters for connection to the network(Internet/Intranet). IP-Installer is a PC program for the initial network configuration to IP video products such as Network Camera or A/V Server. IP-Installer is provided in a CD supplied with NVC 910 or it can be downloaded from "**www.Inscape Data.com**".

Detailed information of Installing and running IP-installer can be found in [IP-installer user's guide]

4.1. Main window of IP-Installer

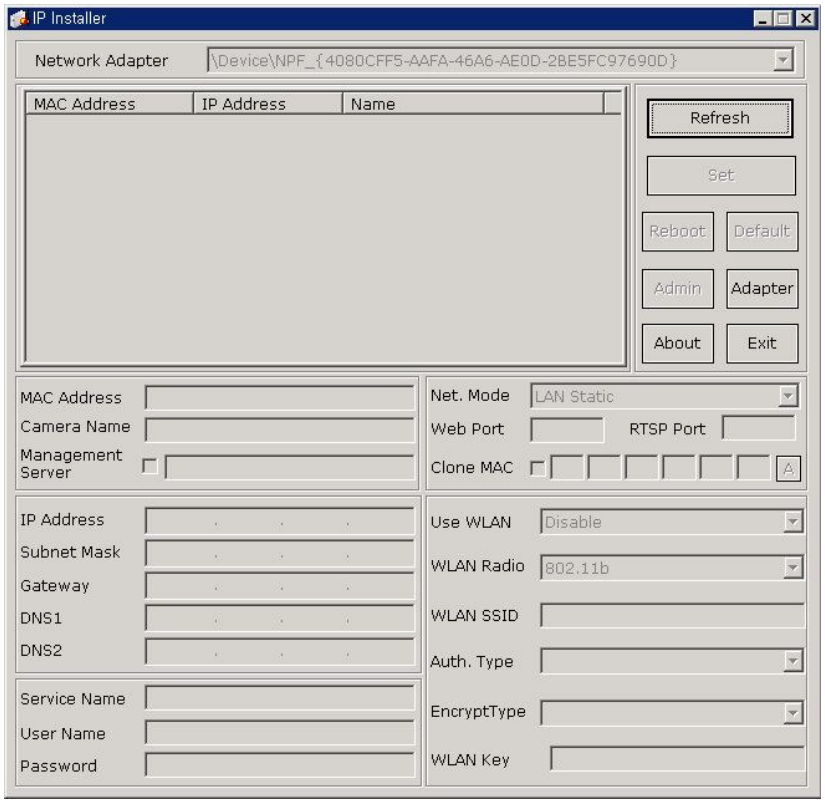


Fig. 4-1 IP Installer

All the basic network parameters needed for the initial connection to IP video products can be assigned by IP-Installer. Once the basic parameters are assigned and the initial connection is successfully made, you can connect to the administration page for more sophisticated control of the network parameters and other operational parameters. Refer to Chapter 5 for more details of the administration page.

5. Configuring NVC 910 in Administrative Mode

5.1. Log On

There are 2 ways of connecting to NVC 910 administrative mode. One is through Internet Explorer and the other is through "**NVR100**" program.

1. Using Internet Explorer

Type in the connection address of the network camera in the address window of the Internet Explorer as followings:

http://[NVC 910 IP address]/admin.htm

Example: http://172.16.64.133/admin.htm

If you changed the HTTP port from default value you can login by typing in:

http://[NVC 910 IP address]:[HTTP port]/admin.htm

Example: http://172.16.64.133:8080/admin.htm

2. Log on from "NVR100"

Select video channel in the viewing window of "**NVR100**". Selected video channel will be highlighted. Click button on the right side of the display screen.

Fig. 5-1 Main Screen of NVR100

3. Input User Name and Password in the display screen shown in Fig. 5-2.

http://172.16.64.133/admin.htm - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://172.16.64.133/admin.htm
Go Links
Enter Network Password
This secure Web Site (at 172.16.64.133) requires you to log on.
Please type the User Name and Password that you use for Secure Realm.
User Name root
Password ******
Save this password in your password list
OK
Cancel

Fig. 5-2 Log On Screen

Factory default User Name and Password are set as 'root' and 'root', respectively. Click on "OK" button to enter into the Basic Setup page of Administrative Mode. If you have changed the username and password of the Administrator, you must log on with the changed username and password.

5.2. Basic Setup

Setup the basic parameters of the NVC 910.

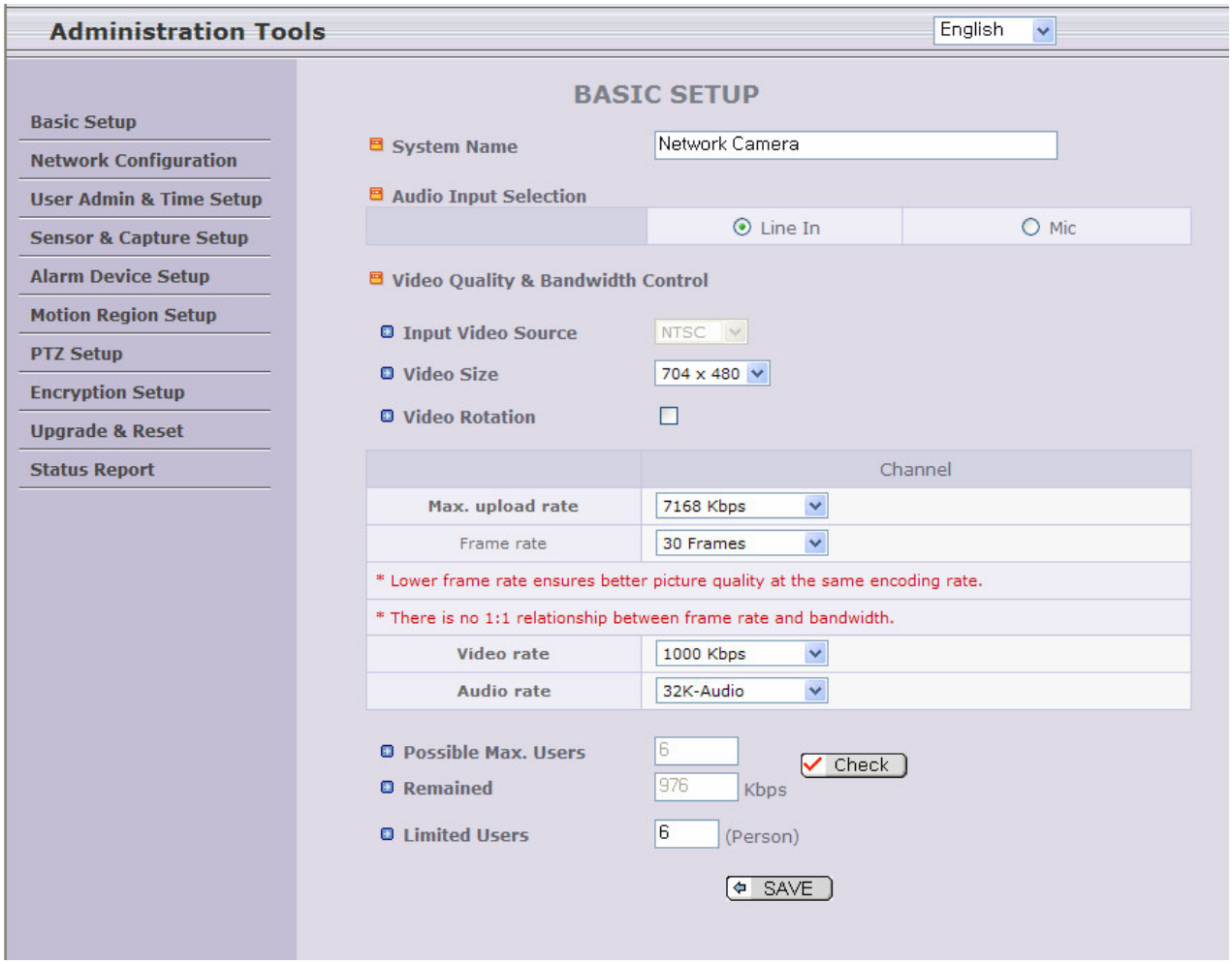


Fig. 5-3 Basic Setup

Field/Button	Sub Field /Button	Description
Language		Select a language of your choice
System Name		Logical name of the NVC 910. It is same as the one set-up by IP-installer. You can reassign the system name.
Audio Input Selection		Select the type of input audio. ● Select **Line In** for using Line-out from audio devices. ● Select **Mic** for using microphone.

Video Quality & Bandwidth Control	Input Video Source	This filed is set by the factory.
	Video Size	Select a video size for transmission ● NTSC (30frames/sec Max.) : 176x144 / 352x240 / 704x480. ● PAL/SECAM (25frames/sec Max.) : 176x144 / 352x288 / 704x576
	Max upload rate	Assign maximum bandwidth of the uplink for the network connected to NVC 910.
	Frame rate	Assign number of video frames to be transmitted for each second. You can improve picture quality by lowering frame rate for the same bandwidth.
	Video rate	Assign bandwidth for transmitting video data.
	Audio rate	Assign bandwidth for transmitting audio data. Audio data is not transmitted if you select "**NA**"
	Check	After you finish set up of video and audio for all the channels, click on this box to obtain the possible maximum number of users (**Possible Max Users**) and remaining network bandwidth (**Remained**) remaining when possible maximum users are connected.
	Possible Max Users	It shows the number of maximum simultaneous connections for the network connection set-up.
	Remained	It shows the network bandwidth remaining when Possible Max Users are connected.
	Limited users	Useful network bandwidth varies according to the condition of the network. This parameter is used to limit the number of the simultaneous connections below the number shown in Possible Max Users.
Save		Save the set-up parameters when the set-up parameters are done.

5.3. Network Configuration

Setup the network parameters appropriately in accordance with your network environment. Many of the parameters in this page are same as those set up by "**IP-Installer**".

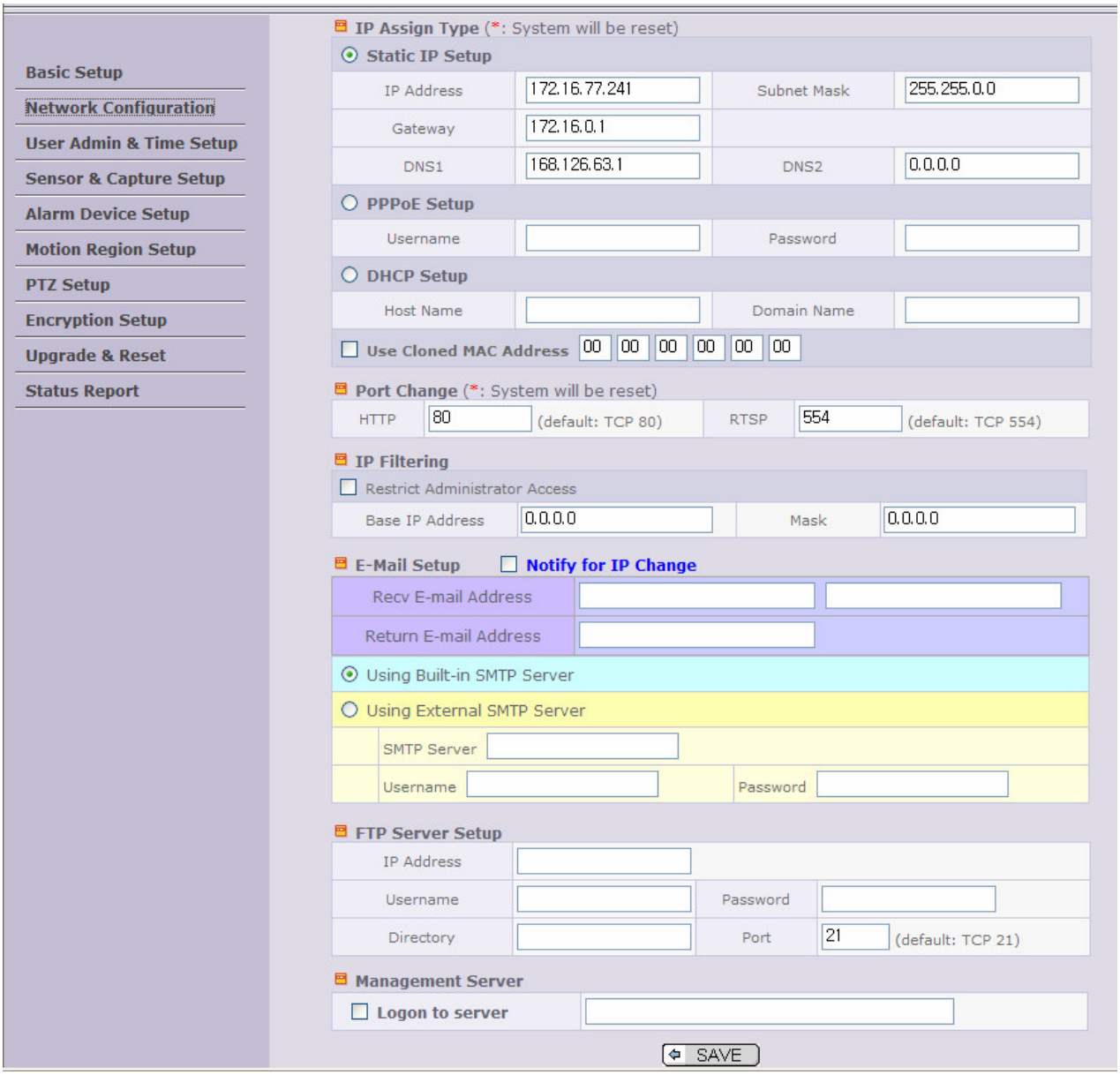


Fig. 5-4 Network Configuration

Field/Button	Sub Field /Button	Description
IP Assign Type		The network types supported by the NVC 910 are LAN(fixed IP), PPPoE, and DHCP(automatic IP allocation)
	Static IP Setup	When the network environment is fixed IP, select 'LAN' in the network type, and put the IP address, Subnet Mask, Gateway, DNS1 and DNS2. Ask your network administrator or ISP for the information. DNS2 is used when DNS1 does not work.
	PPPoE Setup	When the network environment is PPPoE and IP address is assigned automatically, select 'PPPoE' in the network type. Next, fill in the 'User Name' and 'Password' fields with the values assigned by the ISP.
	DHCP Setup	When the network environment is "automatic IP allocation by DHCP", select 'DHCP' in the network type. For cable modem connection, select this mode. Refer to **[IP-installer user's guide]** for "Host name and domain for Cable Modem
	Clone MAC	Refer to **[IP-installer user's guide]** for "Clone MAC"
Port Change		Each port should have a number below 65,535.
	RTSP	The RTSP port is used for transmitting real time audio/video data from the network camera. Default is 554.
	HTTP	HTTP port is used for the connection to the admin page. Default is 80.
IP Filtering		You can restrict the access to the administrator page from IP addresses beyond certain IP address range.
	Restrict Administrator Access	Check at this box to restrict administrative log on.
	Base IP Address	Input IP address of the PC which is intended to be used for log on to administrative mode.
	Mask	This is same as subnet mask. It is used to allow administrative log on only to the PCs located in the same subnet as the base IP address. If you want to allow only one PC to access in administrative mode, set this value to 255.255.255.255.

E-Mail Setup		
	Notify for IP Change	If you check this, the IP address will be sent via E-mail whenever the IP address changes. It is sent to the E-mail address set by "**Recv E-Mail Address**".
	Recv E-Mail Address	Enter E-mail address to receive information sent from your network camera. This is same as E-mail field in IP-installer.
	Return E-Mail Address	Fill in this field with correct e-mail address to identify the mail sent from the network camera
	Using Built-in SMTP Server	If you are using web mail services having no SMTP server, check the radio button at the left of "**Using Built-in SMTP Server"** and enter valid e-mail address to avoid spam filtering on the receiving e-mail server.
	Using External SMTP Server	If you are using external mail server, fill in the fields with proper parameters.
FTP Server Setup		Setup IP address, Username, Password and Directory of FTP server to send data in case of alarm. Default FTP port number is 21.
Management Server		You can register the network camera to the Management Server (DDNS Server) for name service to your network camera.
	Log on to server	Check this box to enable log on to the management server. By log on to the management server your network camera can use domain name instead of numeric IP address. This feature is particularly useful when your network camera is using dynamic IP address. Input valid management server (DDNS Server) name for the service. You must have an account on the management server (DDNS Server) and register your IP video devices under your account to use this feature. Domain name of your network camera can be assigned when you register your network camera to the management server under your account. One of the servers available is **mgmt.net-video.net**. For opening an account, visit **www.net-video.net** .

5.5. User Admin & Time Setup

You can change the ID and password of users and also assign different attributes for each user.

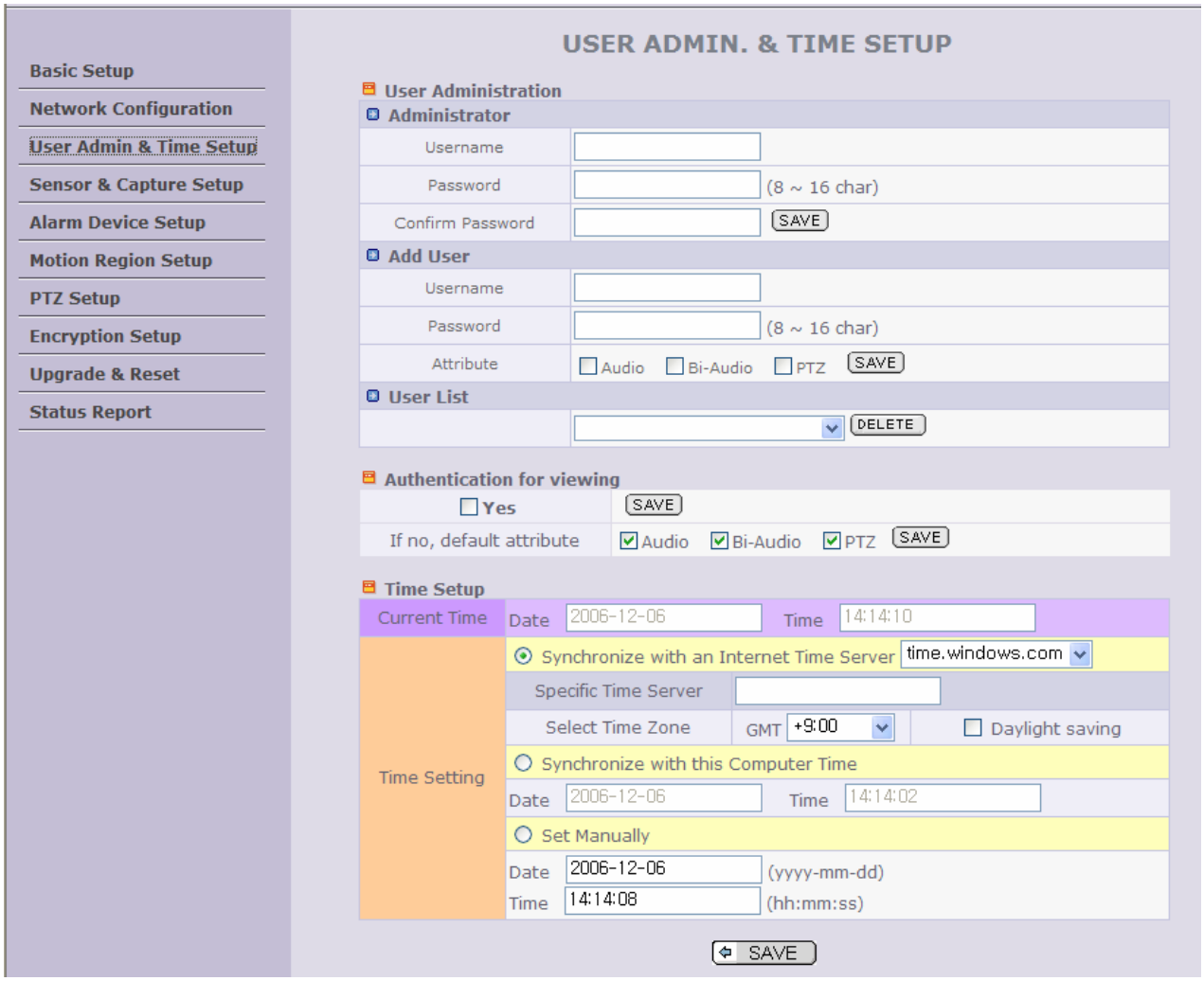


Fig. 5-7 User Administrator & Time Setup

Field/Button	Sub Field /Button	Description
User Administration	Administrator Username	Admin ID. Default ID is "root"
	Administrator password :	Admin password. The default password is "root".
	Administrator	Enter the password once more to confirm the password.

	Confirm Password	
	Add User Username	Enter the user ID you want to add. Up to 100 users are supported by NVC 910.
	Add User Password	Enter the user password.
	Add User Attribute	You can set different system resource access capabilities for each of the users. ● Attributes are Audio, Bi-directional Audio and Pan/Tilt control. ● For example, if you want a specified user to hear the audio from the NVC 910, check Audio in the check box.
	User List	You can list "user ids" and " their attributes" here. ● format : user id[A, BA, P] : ■ A – Audio, ■ B – Bi-directional audio, ■ P – PTZ, attribute. You can delete specific user by clicking the **DELETE** button.
Authentication for Viewing	YES **SAVE**	If you want to restrict viewing access to the NVC 910, check at the box left to **Yes** and click on **Save**. Users need to input ID and password to connect to NVC 910 in viewing mode in a pop up window as shown below.. **Fig. 5-8. User Authentication in NVC 910**
	If No, default attribute	If you uncheck for the Authentication for Viewing, all users can access the NVC 910 with the same attribute set here. Checked attributes are enabled. Click "**Save**" to save the attribute.
Time Setup	Current Time	It shows you the current time of NVC 910.
	Synchronize with an Internet Time	Synchronize the time with the internet time server at the right. When the time server is out of the reach from NVC 910, you can assign time server by filling in **Specific Time Server** field.

	Server	
	Synchronize With this Computer Time	Synchronize the time with the time of the PC.
	Set Manually	Set the time manually. Fill in the fields with desired formats.
SAVE		Save the set up parameters
If you lost Administrator's ID and password, the only means of recovery is to reset the settings to factory default, but then you lose your previous settings.		

5.6. Sensor & Capture Setup

This is the setup page for sensors and video capture conditions. Captured video can be sent to user by FTP or E-mail upon configuration.

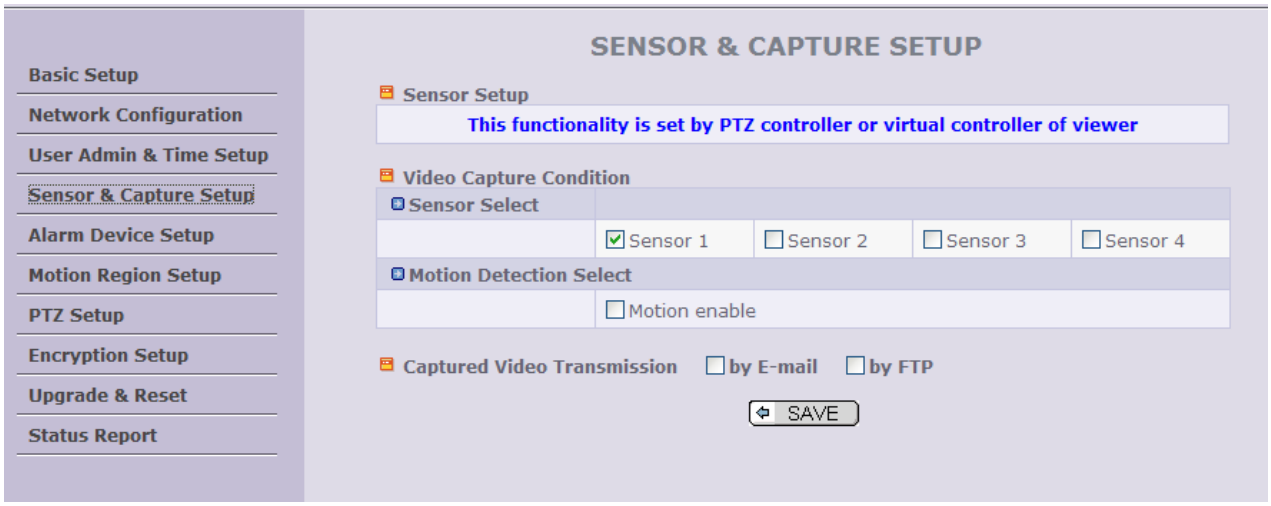


Fig. 5-9 Sensor & Capture Setup

Field/Button	Sub Field /Button	Description
Sensor Setup	Sensor 1	**Not applicable for NVC 910.** **For the sensor setup use the OSD menu available from virtual system controller. [Refer to NVR100 user's guide]**
	Name	**Not applicable for NVC 910.**
Video Capture Condition		It sets the condition of video transmission via FTP or E-mail. The NVC 910 supports 2 types of conditions which are mutually independent. 1. Sensor initiated: when at least one of the sensor detects alarm condition. 2. Motion-Detection initiated : when motion is detected from video channel
	Sensor Select	Check to enable Sensor initiated capture.
	Motion Detection Select	Check to enable motion detection initiated capture.

Captured Video Transmission		Select a way of sending captured video. You can send captured video through FTP or E-mail, or both. -
	By E-Mail	Check to send captured video by e-mail. E-mail is sent to the **Recv E-mail address.** Refer to **[Section 5.3.]** Captured video data for E-mail consists of intra frames only in consideration of the limited storage space for E-mail account. FTP data contains entire video frames.
	By FTP	Check to send captured video by FTP. FTP is sent to the **FTP** Server. Refer to **[Section 5.3.]** If the FTP server is not properly assigned in "**Network Configuration" mode**, NVC 910 ignores the video transmission by FTP
SAVE		Save the setup parameters.

5.7. Alarm Device Setup

Test the alarm output and describe the condition of alarm annunciation.

Sensor related alarm operation, alarm device can operate only when the sensor is active at least over 2 seconds.

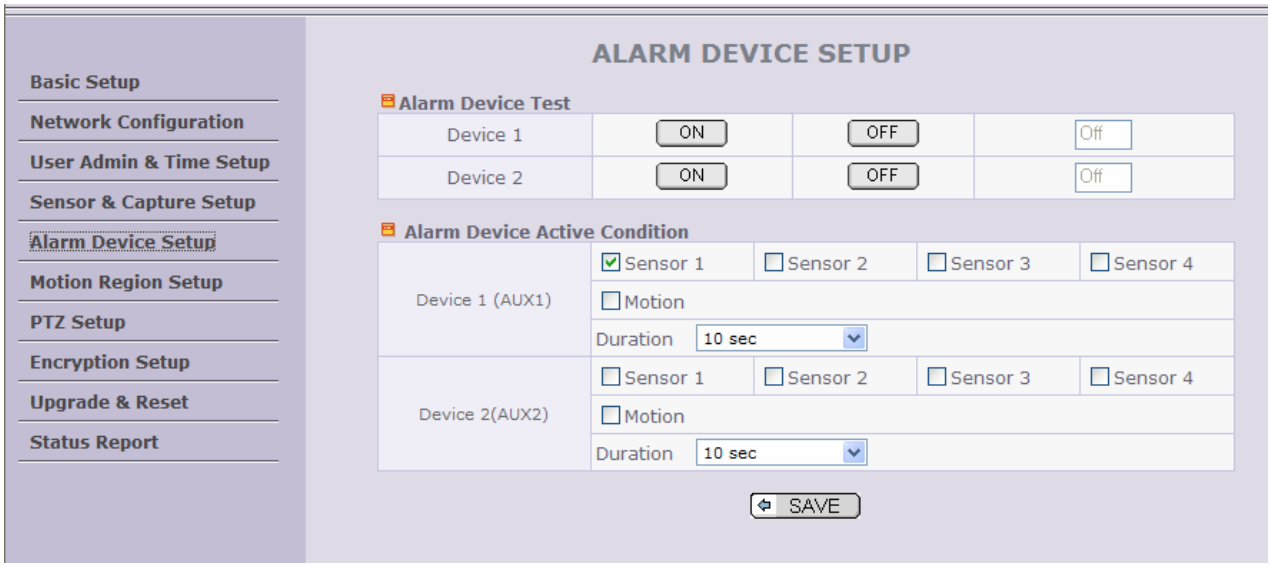


Fig. 5-10 Alarm Device Setup

Field/Button	Sub Field /Button	Description
Alarm Device Test		Test alarm devices. Click on On/Off for testing Small box with white background indicates the status of the relay by On/Off.
	ON	On the alarm output (close the relay contact)
	OFF	Off the alarm output (Open the relay contact)
Sound Test		
Alarm Device Active Condition		Setup the condition of activating alarm device. Select sensor or motion detection as the condition.
	Name	Logical name of the alarm device can be input into the box at the left.
	Sensor	Check at the box at the left of to allow alarm generation upon sensor input.
	Motion	Check at the box at the left to allow alarm generation upon Motion detection
	Duration	Set the duration of Alarm annunciation. 10 sec, 30 sec, 1 min, 2 min, 5 min, 10 min, 30 min, 1 hour.

SAVE		Save the setup parameters.

5.8. Motion Region Setup

Set the motion detection regions. Up to 3 regions can be defined.

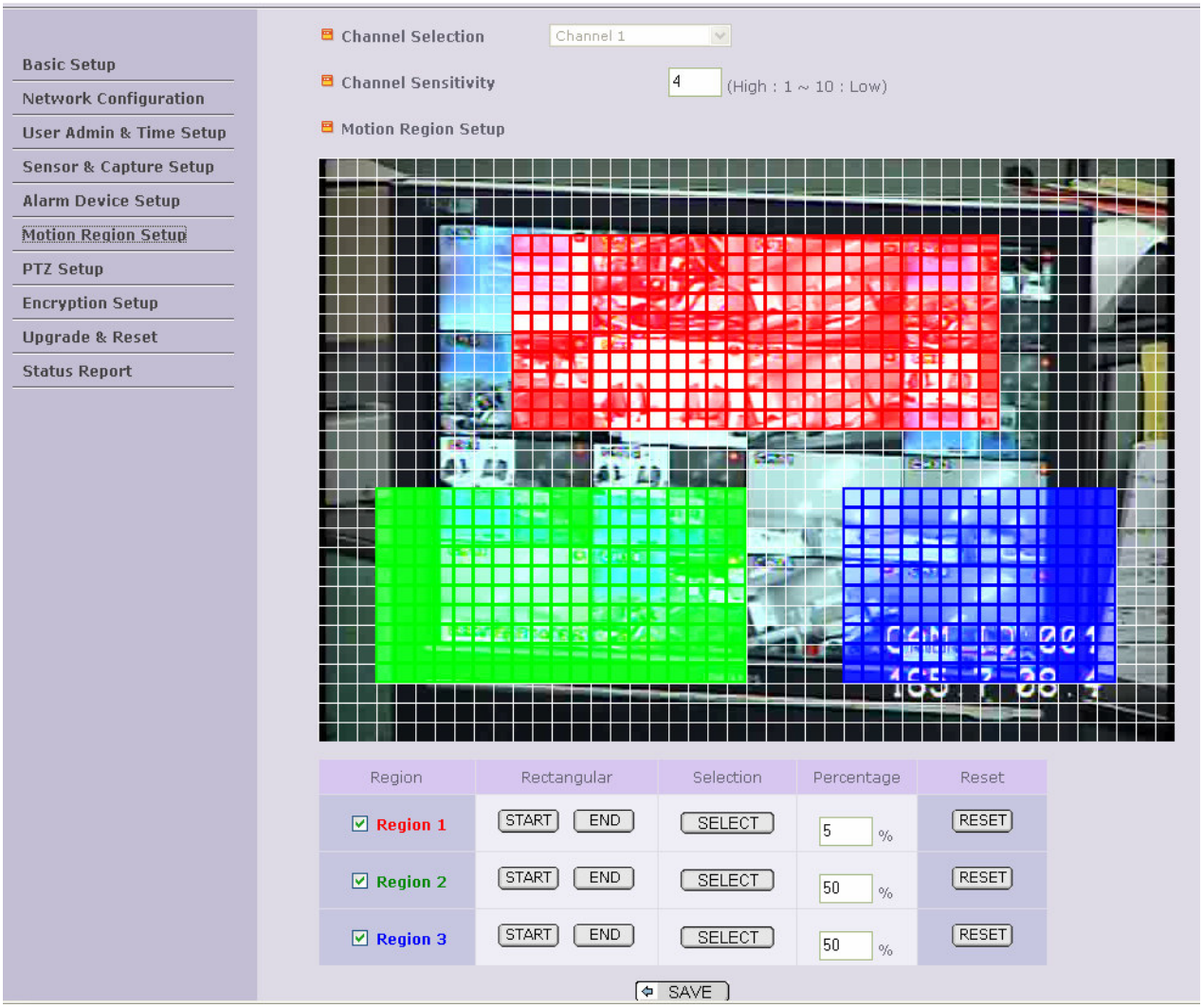


Fig. 5-11 Motion Region Setup

Field/Button	Sub Field /Button	Description
Channel Selection		Not applicable.
Channel Sensitivity		Set the sensitivity in motion detection for each channel. 1 is the most sensitive, and 10 is the least sensitive.

Motion Region Setup		Set up to 3 the motion detection zone
	Region 1, 2, or 3	Enable each zone by checking the box at the left of each Region. **. To set the region,** 1. Click on **START** and click on a box overlaid on the video 2. Click on **END** and click on a box overlaid on the video. 3. The defined motion detection zone will be indicated with corresponding colors. **Legend of the color :** red(region 1), green(region 2), blue(region3).
	START	Enable selection of rectangular zone start.
	END	Enable selection of rectangular zone end.
	SELECT	Click on this button and click on desired rectangle to add or delete the rectangular region to the motion detection zone.
	Percentage	This value controls the sensitivity of each region. 1 is the most sensitive and 100 is the least sensitive
	RESET	Clears the start & end point to (0,0) & (0,0)
SAVE		Save the setup parameters.

5.9. PTZ Setup

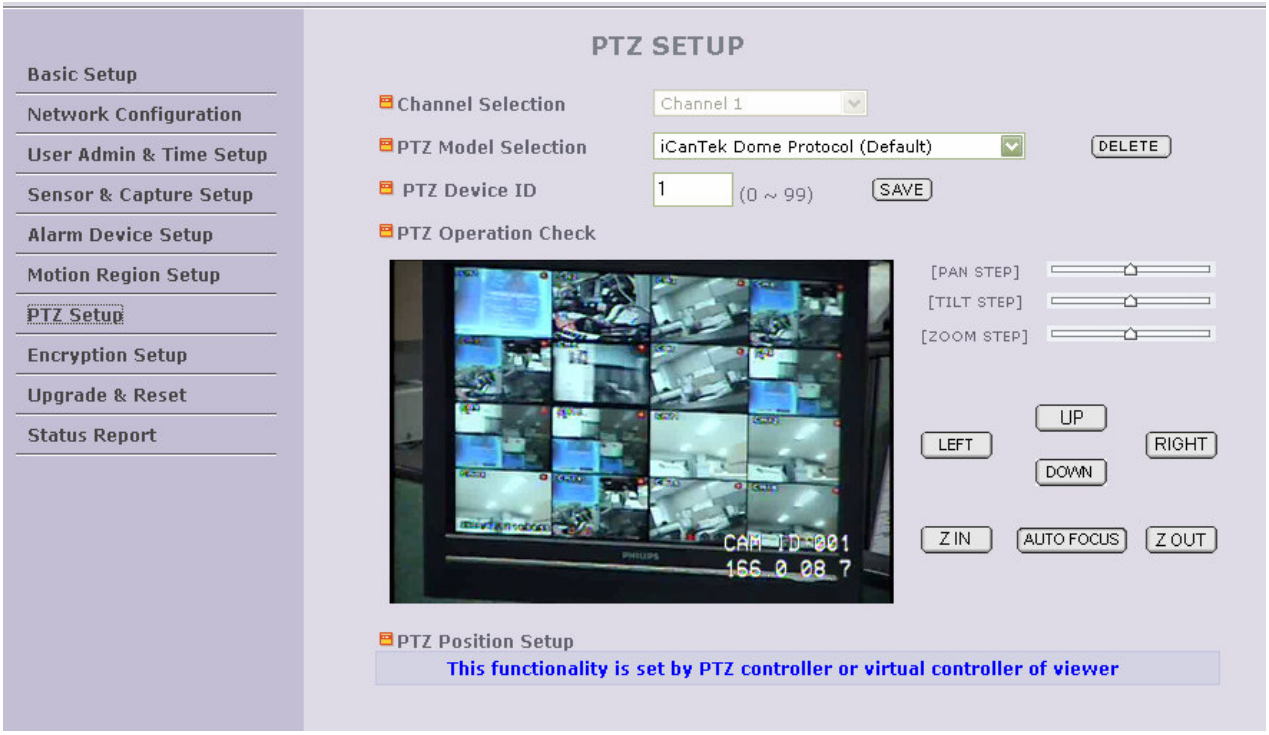


Fig. 5-12 PTZ Setup

Field/Button	Sub Field /Button	Description
Channel Selection		Not applicable
PTZ Model Selection		Choose the PTZ model. Choose default model for proper operation.
	Delete Button	Press this button to delete the setup of PTZ
PTZ Device ID		Your PTZ device needs an ID, input ID in this field. Click on SAVE to save the ID.
PTZ Operation Check		You can check the various operation of the PTZ devices. "Left"/"Right"/"UP"/"DOWN" , "AUTO FOCUS"/"ZIN"/"ZOUT"
PTZ Position Setup		You can set up the PTZ limitation & preset positions if the PTZ device supports it.

	Panning Limitation	Set the left/right limitation and test. Select Left/Right position before setting.
	Panning Limitation RESET	Clear the panning limitation previously set. The panning range will be the same as the PTZ device allows.
	Panning Limitation SET	Set the present position as left or right panning limitation.
	Panning Limitation TEST	Test the panning limitation which was set previously.
	Preset Position :	Set the preset position and test.
	Preset Position Preset & Move	Select a preset position to move to. Movement to the preset position will be made upon clicking on "MOVE"
	Preset Position Name Set	Assign logical name for the preset position. Enter into the field and click on SET.
	Preset Position Set	Set the present position as a preset position with position number shown at the right of "Preset & Move" and name shown at the right of "Name Set".

5.10. Encryption Set up

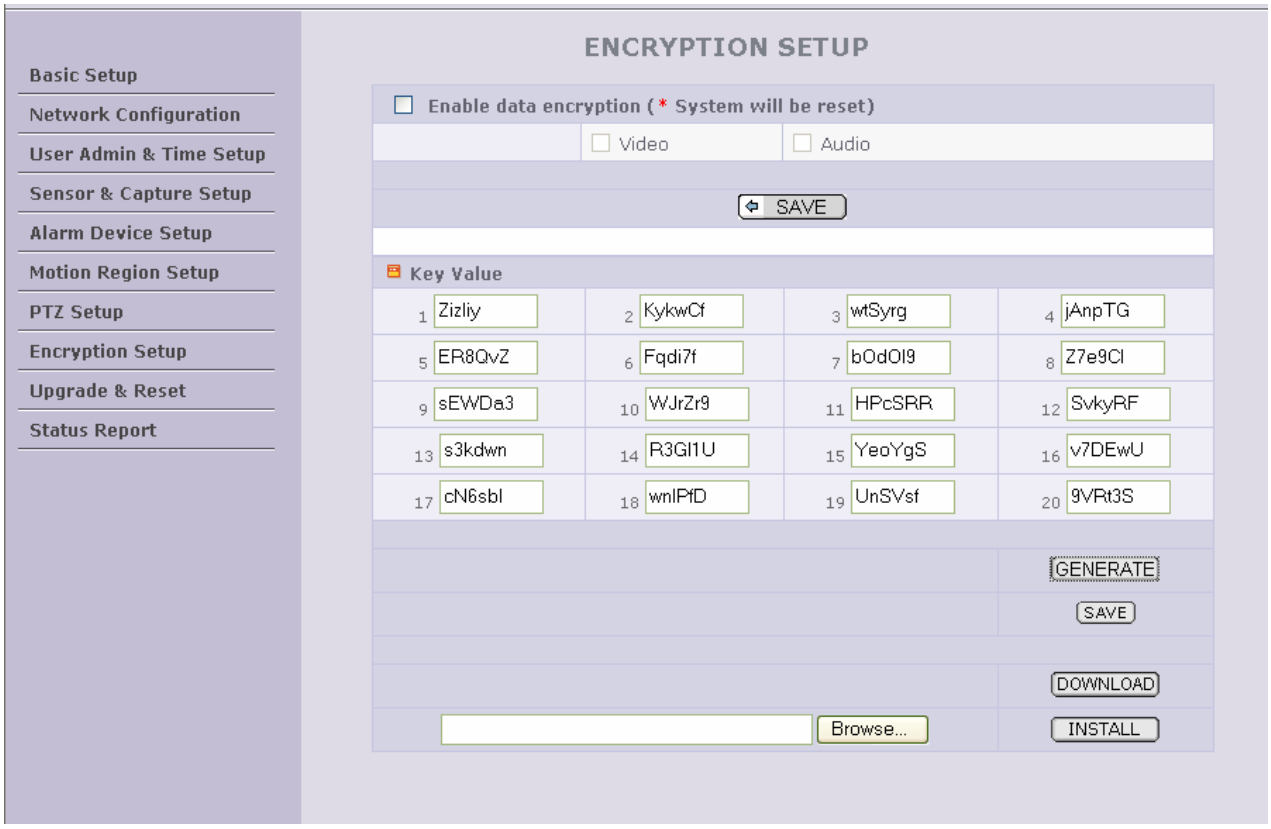


Fig. 5-13 Encryption Setup

For additional security to the video and audio data transmitted from the network camera, you can set key codes and use them for encrypting the data from the network camera.

You can selectively activate encryption for the video and audio data. For enabling the encryption, check at the box at the left of the "Enable data encryption" then check at the proper check boxes at the left of "Video" and "Audio". After the selection, click on SAVE button beneath the "Video" and "Audio" check boxes.

Field/Button	Sub Field /Button	Description
Enable Data Encryption		Check at this box to apply data encryption. If it is unchecked encryption is applied on neither video nor audio data regardless of the selection below.
	Video	Check to enable encryption on the video data.
	Audio	Check to enable encryption on the audio data.

	SAVE	After the selection, click on SAVE button.
Key Value		You can use up to 20 different key codes for the encryption of the data
	GENERATE	To generate the key value click on "GENERATE" button. The boxes for the Key values will be filled with new values.
	SAVE	**Save Key value on the network camera**: Click on SAVE button beneath GENERATE button to save the key value generated by the network camera.
	DOWNLOAD	**Download Key value to your PC** : The key values can be downloaded and stored as a file to your PC for reference when you make connection. When encryption is enabled, the PC client program will ask for particular key value out of the 20 available key values.
	INSTALL	**Upload key value to the network camera** : The key value stored on your PC can be uploaded to your network camera. This feature is useful when you manage multiple network cameras having same key value sets. Select a file having key values then click on "INSTALL" button to upload the key values. Find file saving the Key value before uploading to the network camera.

5.11. Upgrade & Reset

You can upgrade the NVC 910 via IP network.

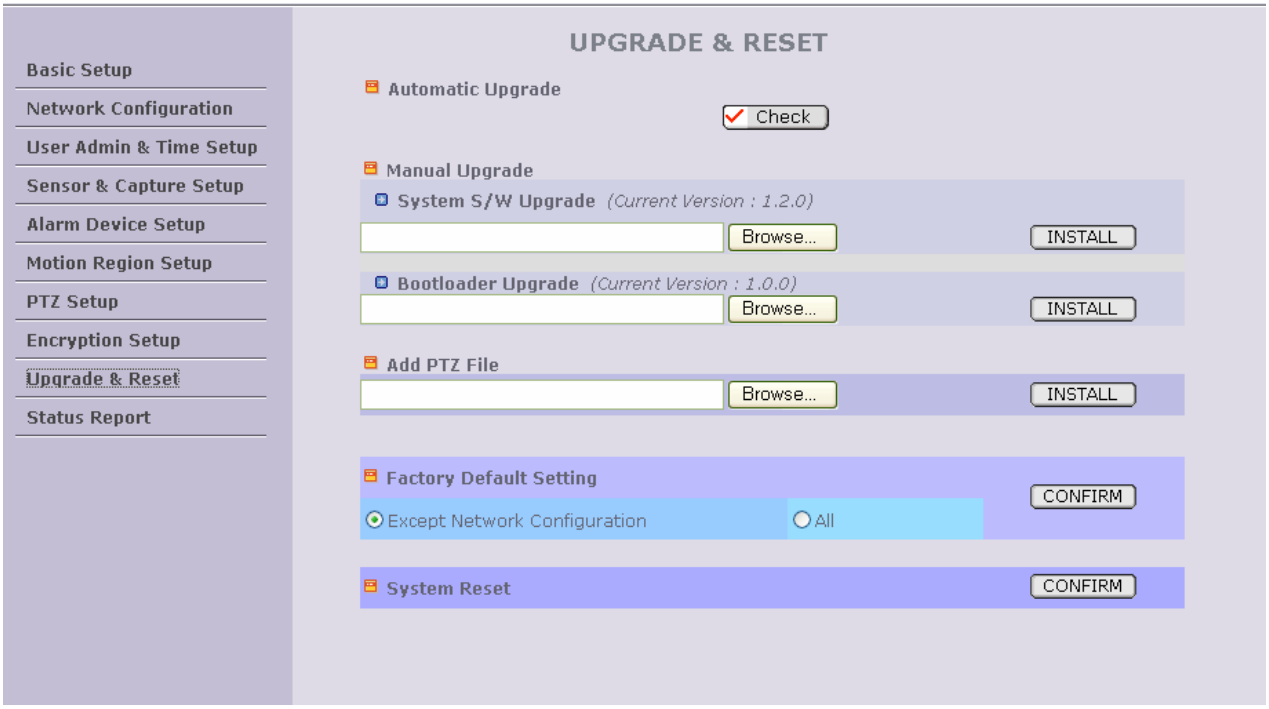


Fig. 5-14 Upgrade & Reset

For each of the upgrade of the system component, upgrade code should be downloaded from **Inscape Data**'s home page before the system upgrade is performed.

(Refer to **[6.4. How To Upgrade Your NVC 910 System]**

Field/Button	Sub Field /Button	Description
Automatic Upgrade		This function will be supported in future. Automatic upgrade is a feature that enables network camera to upgrade to newly released system software by automatically connecting to upgrade server. Click on **check** button to find the availability of upgrade firmware.
Manual Upgrade		Upgrade the system manually.
	System S/W Upgrade	Upgrade the system software installed in the network camera via the network. System software needed for the upgrade can be downloaded

		from Inscape Data's home page. Refer to **[6.4. How To Upgrade Your NVC 910 System].**
	Bootloader Upgrade	Upgrade the bootloader installed in the network camera via the network. Bootloader needed for the upgrade can be downloaded from Inscape Data's home page. Refer to **[6.4. How to upgrade NVC 910 firmware]**
Add PTZ File		Not applicable for NVC 910
Factory Default Setting		Re-initialize the network camera to factory default state. By checking on a Radio button "Except Network Configuration", you can preserve the parameters for the network. Checking on "All", will return all the parameters to factory default state. **Once NVC 910 is re-initialized as factory default state, it should be set-up again using IP-Installer.**
System Reset		Perform remote reset by clicking the "CONFIRM" button. **All previous connections will be disconnected upon reset. NVC 910 does not resume the connections and the users must re-connect to the server manually.**

5.12. Status Report

It shows you system records since the system started.

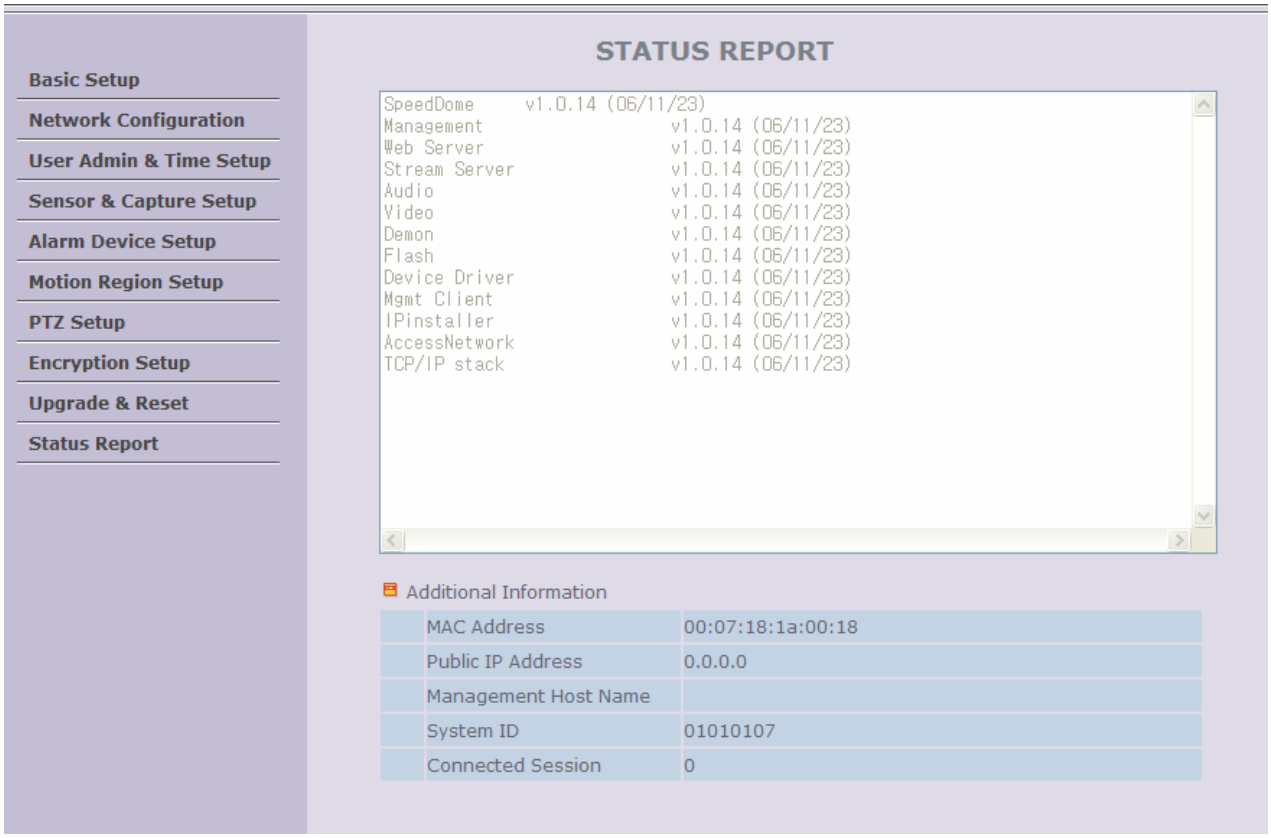


Fig. 5-15 Status Report

You can check the problems as well as the versions and event status of the whole system and each module.

6. Tips for Using NVC 910

6.1. Alarm (for Sensor input) and AUX(for Relay output)

Alarm terminal at the connector panel of NVC 910 is used to connect various sensing and alerting devices. Examples of sensing devices are infrared sensors, motion sensors, heat/smoke sensors, magnetic sensor, etc. Aux terminal is used for connecting alerting device such as loud speaker, flashing light, etc.

1. "ALARM" connector for Sensor Input to NVC 910

Connect the two wires of the sensors. The sensor type can be set in NVR100.

1) Please run NVR100 , connect NVC 910 and click on the "Virtual System Controller" button and then you will get Virtual System Controller screen
2) Select the "menu" button on Virtual System Controller, then OSD menus are displayed on the corresponding video display screen of the NVR100. Using the buttons on the "Virtual System Controller" select "ALARM", "ALARM NO." and then "ALARM INPUT" sequentially. The screen changes are illustrated in Fig.6-1

Fig.6-1 Setup the Sensor Type at NVR100/Virtual System Controller

Please connect sensor between "Signal "and "GND" pin of the alarm terminal at the connector panel of NVC 910

Fig. 6-2 shows equivalent alarm input circuit of NVC 910.

"+" and "-"are "Signal" and "GND", respectively.

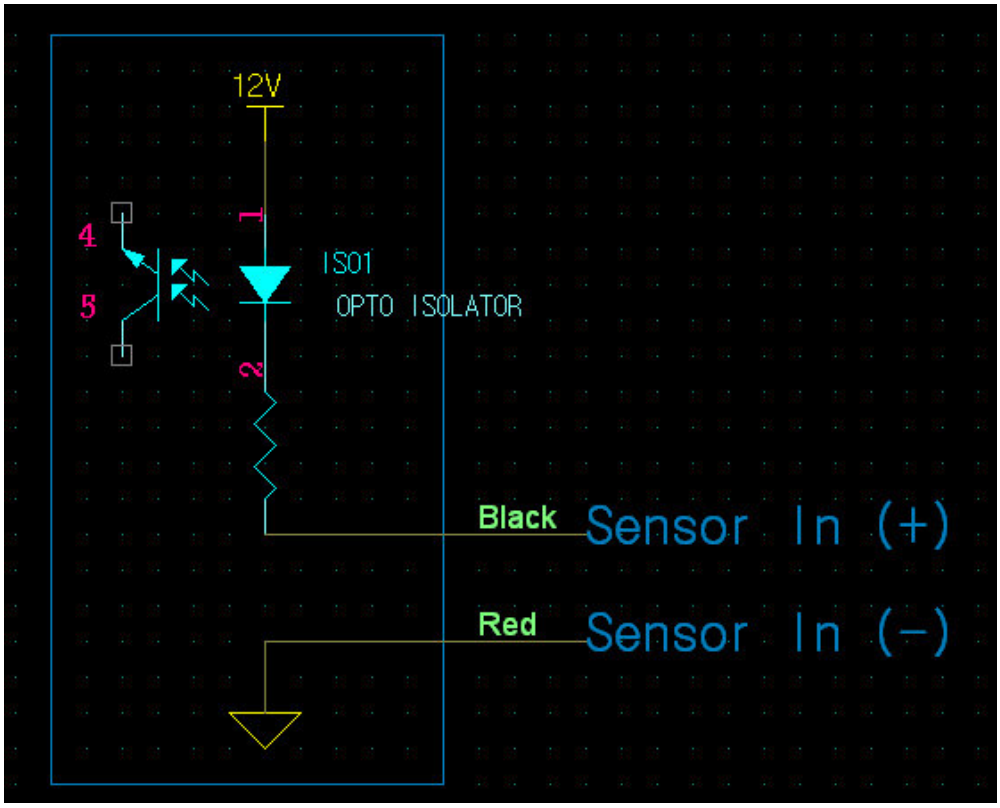


Fig. 6-2 Alarm input of NVC 910

2. "AUX" connector for Relay Output from NVC 910

A Relay output is provided for connecting alarm devices or for remote on/off devices such as light control. Relay circuits are normal open and circuits are closed upon alarm output or remote on. The relay is capable of switching AC/DC 30V, 1A electrical signal.

You can connect up relay to "AUX 1" and "AUX 2" at the bottom panel of NVC 910. Fig. 6-3 shows the relay output circuit which is located at the inside of NVC 910.

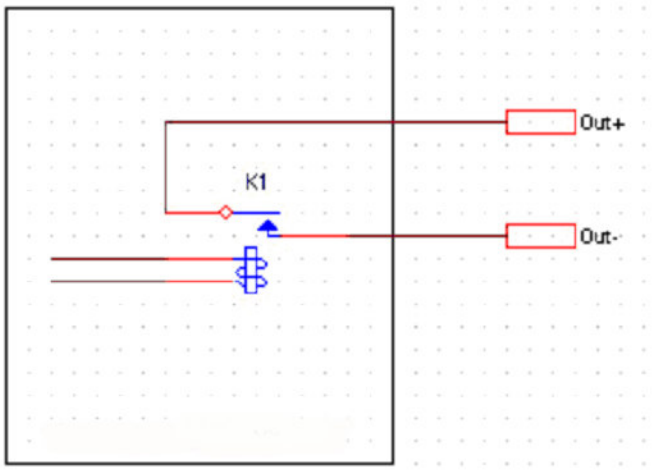


Fig. 6-3 RELAY Output of NVC 910

3. Connection of Sensor, Alarm Device

3.1 Connection of Sensor (Fig.6-4)

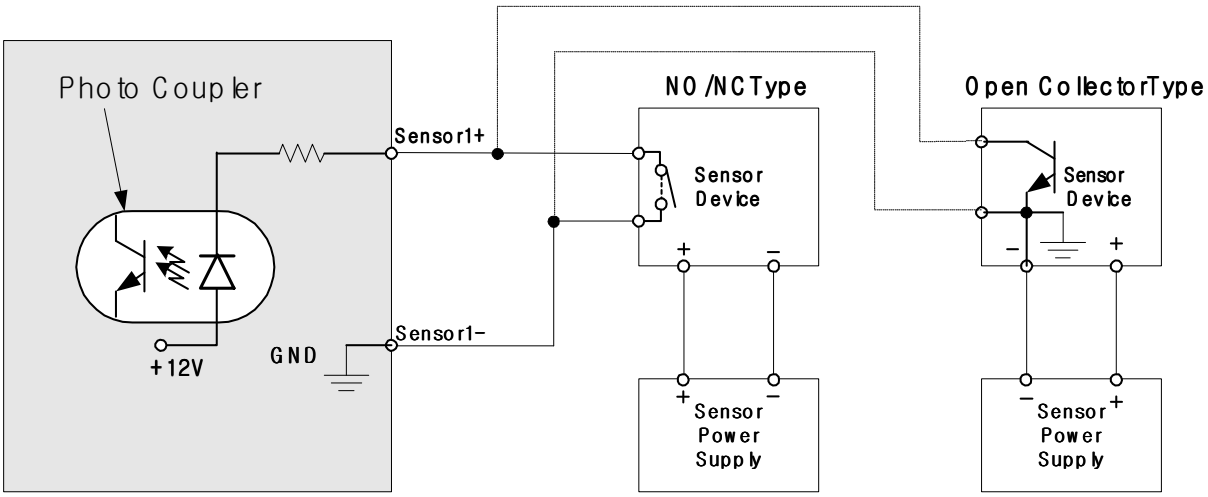


Fig. 6-4 Connection of Sensor to NVC 910

3.2 Connection of Relay(Fig.6-5)

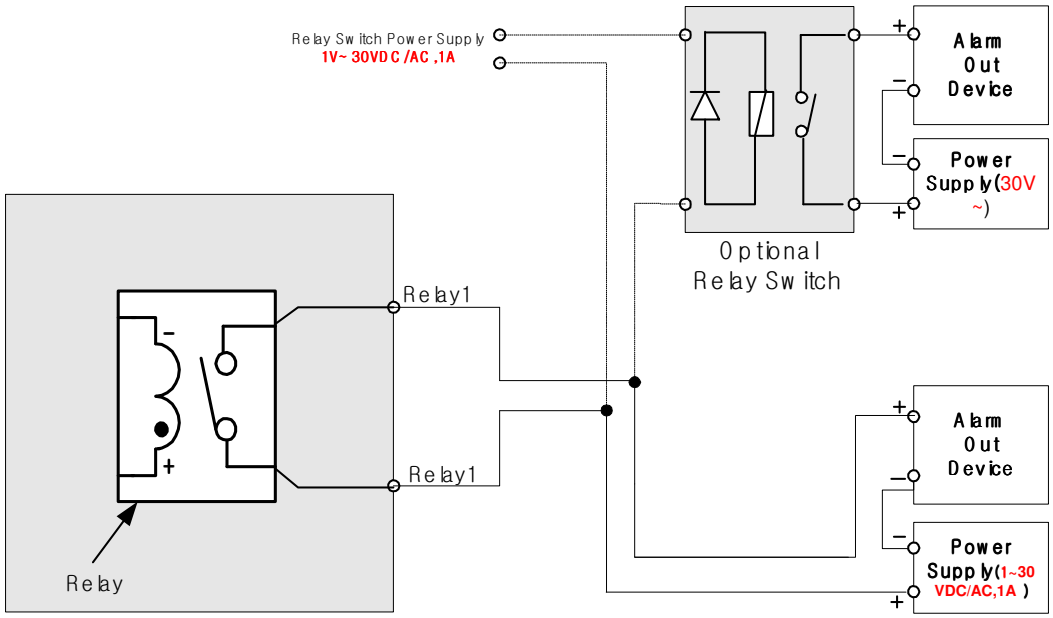


Fig. 6-5 Connection of Relay to NVC 910

You can use the supported relay output to directly drive a maximum load of 30V AC/DC at 1A. By connecting additionally relay circuitry (such as optional relay switch), it can also drive heavier loads.

6.2. Trouble Shooting

1. After NVC 910 is successfully installed.

- **NVC 910 in viewing mode, neither channel name nor video is display and eventually timeout message is shown up.**

Check the power and network connection of NVC 910.

To check if the network is properly operating, open the browser and try to connect to any server.

Example) http://www.yahoo.com

Or open the MS-DOS Prompt and type the following.

ping www.yahoo.com

Then press Enter. If you see the " Reply from …" message it means that the network is working properly.

To check if the NVC 910 is connected, open the MS-DOS Prompt and type the following.

ping [the IP of the server]

Example) ping 192.168.1.112

If you see the "Reply from …" message, it means that the server is properly connected.

If you do not see a Reply message, check if the network cable and power cable are properly connected.

2. After successfully connecting he NVC 910 to IP network

• **Video movement is slow.**

In Basic Setup of Admin Mode, lower the "Quality". High quality means more data. You can also set the "Max. Bandwidth" to higher value. But this value must be lower than the maximum upload speed of your network. For example, if the maximum uploading bandwidth of the network is 400Kbps, set the total "Max. upload rate" as 384Kbps. If you set it higher, the video image can be corrupted with artifacts.

Ask your network manager or ISP for maximum uploading bandwidth of the network.

• **The image is dull and I see green, pink dots.**

This could be caused by performance limitation of the PC. Do not run too many programs while running viewer program. The other reason could be missing data while transmission from NVC 910.

• **Mosaic phenomenon.**

Mosaic phenomenon occurs when not enough network bandwidth is available considering the resolution and frame rate of the video.

Example is 704x480 video with low Max. Bandwidth.

Users are recommended to adjust resolution and frame rates to lower values for lower bandwidth network.

3. Additional Trouble Shooting

Problem	Solution
No operating	. Check if the power supply is AC24V. . Check if RS-485 communication cable is connected correctly. . Check camera ID setting. . Check the termination.
No picture	. Check all cable connections.
Dark screen	. Adjust the monitor status.
Abnormal camera Operation status	. Check if voltage level is out of the specification. . Check the termination.
Screen not clear	. Check if there is dust on the lens. . If exposed to excessive light, change the camera angle or location. . Adjust the lens focus again.

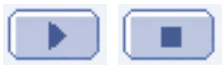
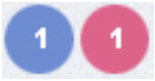
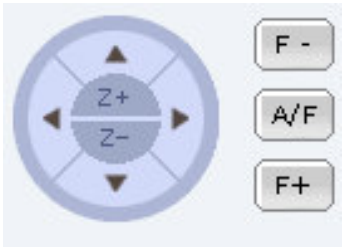
6.3. Web Viewer

NVC 910 is designed to be connected through internet explorer, too. For connection to NVC 910 using internet explorer type in IP address or host address in the address input field of the internet explorer.

Fig. 6-6 Web Viewer

- **Control Panel of Web Viewer**

		Enable bidirectional audio. When bidirectional audio is enabled, voice from your PC is delivered to NVC 910.
		Capture and store the still image on your desk top screen.
		Connect to NVC 910 in administrative mode.
		Rotate the screen by 180 degree.

		Connect to NVC 910.
		Stop the connection.
		Contrast, Brightness, and Volume adjustment.
		Check the box to mute the audio.
		Adjust the size of the screen. Normal (x1), Twice (x2), Half (1/2), Full Screen (full)
		On/off the relay by pressing the button
		Shows the status of the sensor. Blue color means that the sensor is in normal state, while red color indicates alarm situation. Number on the button indicates the number of sensor.
		Move the center of the camera in up/down/left/right directions
	Z+ **Z-**	Zoom in (Z+) Zoom out (Z-)
	F-	Move the focus to further position.
	A/F	Auto focus.
	F+	Move the focus to nearer position.

6.4. How to upgrade NVC 910 firmware

Unless otherwise instructed, the owners of the NVC 910 are recommended to upgrade the system when upgraded firmware is released using manual upgrade procedure.

Followings are the procedure to apply for the manual upgrade

1) Save the upgrade system software to your PC. Upgrade software can be downloaded from Inscape Data's home page or provided in CD.

2) Log on to administrative mode and select "Update & Reset" menu.

3) Click "Browse..." to find the files you want to use for upgrade. This will open a "Choose file" dialogue window. The file extension is "ief".

4) When you've found the file, click "Open." This will select the file and close the "Choose file" dialogue window.

5) Click the "INSTALL" button. An alert message box will pop up. Click "OK" button then it will start uploading the file. This may take some time.

6) Upgrade completion message will appear after the system upgrade has been completed.

7) Reboot NVC 910 by performing "System Reset".

8) After rebooting, log on to the server in administrative mode again and click the "Status Report".

9) Check the version number and release date of the NVC 910.

You can download NVC 910 system software from Inscape Data's homepage.

http://www.Inscape Data.com

Appendix 1. On Site Installation of NVC 910

A. Preparations for the installation

- **A-1. Ceiling Mount Type**

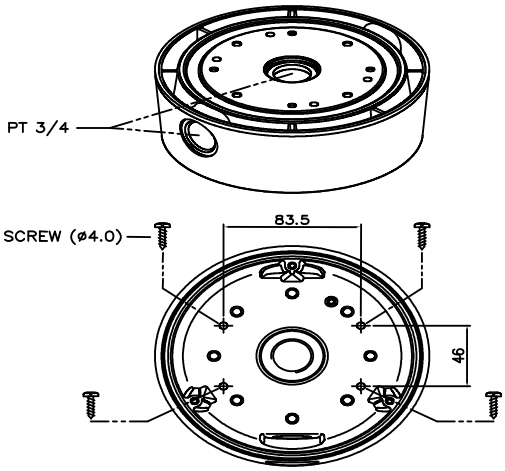


FIG.4

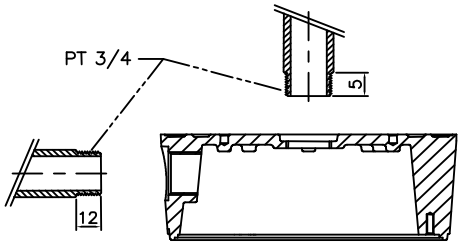


FIG.5

1. Fix the surface mount adaptor with 4pcs of screws on the place where you want to install. (FIG.4)
2. When you use pipe, please note the standard size of pipe. (FIG.5)
3. You can re-assemble the domes.

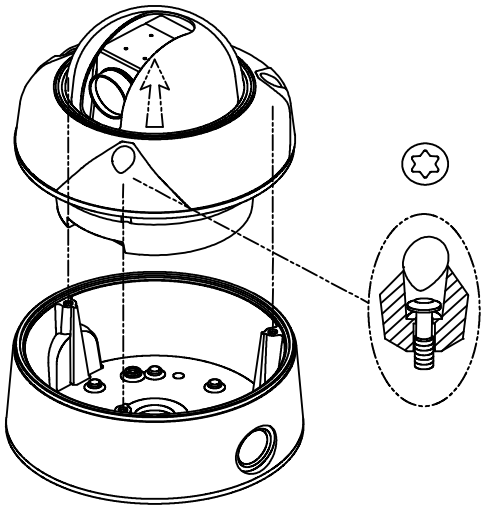
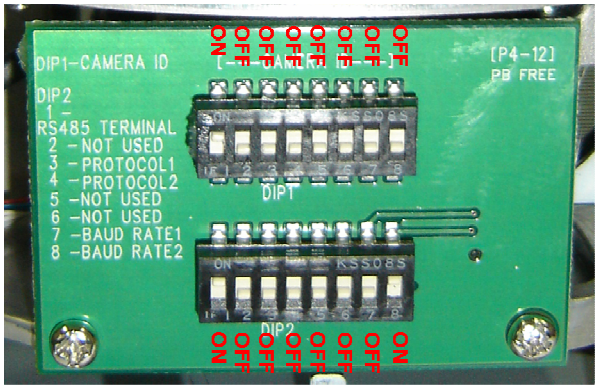


FIG.2

A-2. Set the DIP switches as in the following picture.

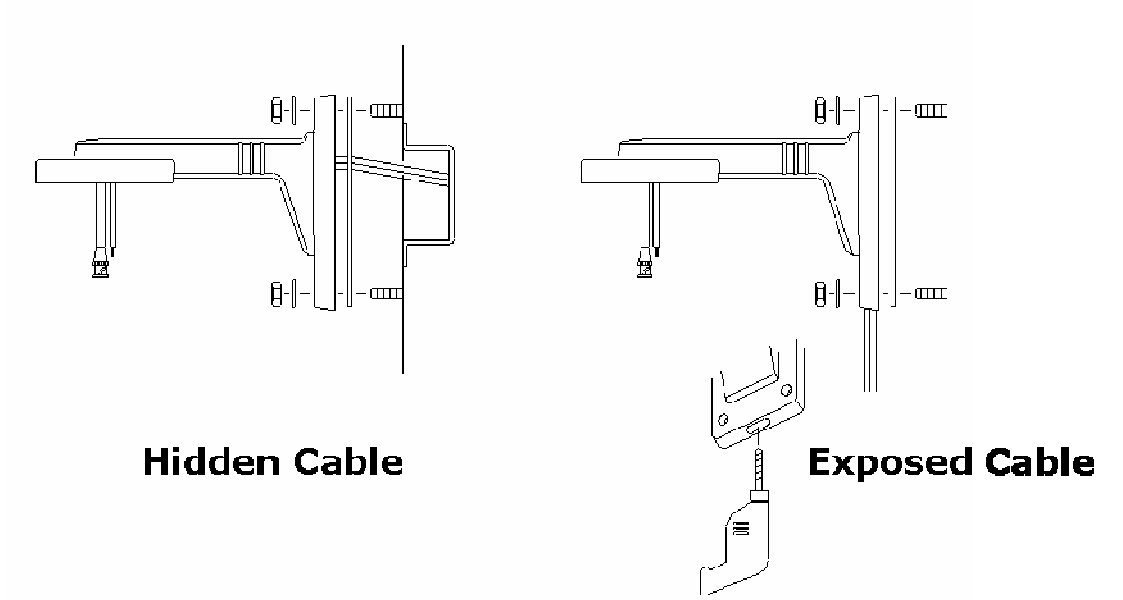
DIP Switches : Make sure to set the switch positions as illustrated below.



When using system controller for the control of the dome, always set the RS-485 communication channel to be : 2400 bps, 8 bit, 1 stop bit, no parity.

. Wall Mounting using Wall Mount Bracket

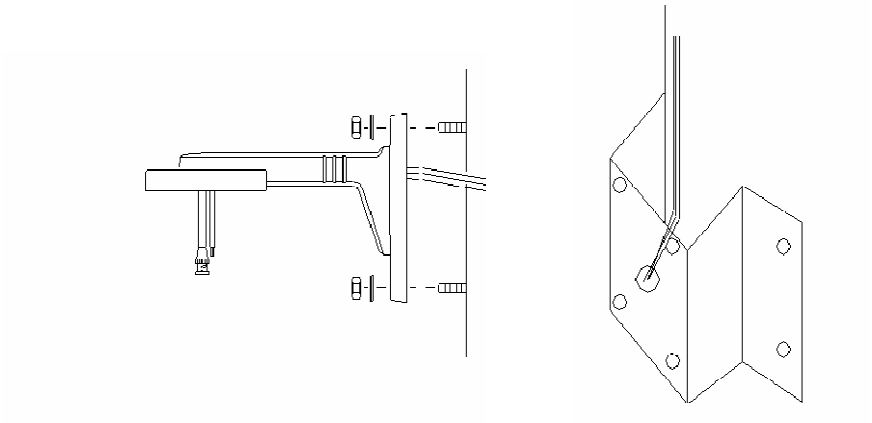
The wall should be strong enough to hold 4 times of the weight of the camera (5.3 KG). This means that the wall should withstand weight of 21.2 KGs in the minimum.



Two ways of cabling in the installation of Wall Mount Bracket

E. Corner Mounting

E-1. Install a corner mount adaptor on the corner of wall.

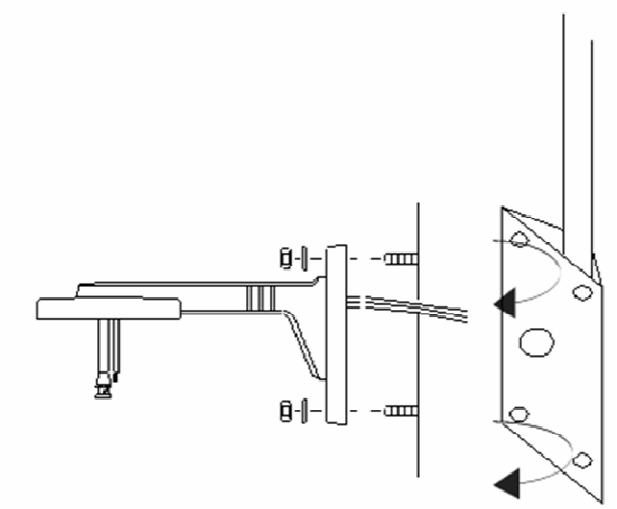


Installation of Corner Mount Adaptor

E-2. Use wall or gooseneck mount bracket to finish installation.

F. Pole Mounting

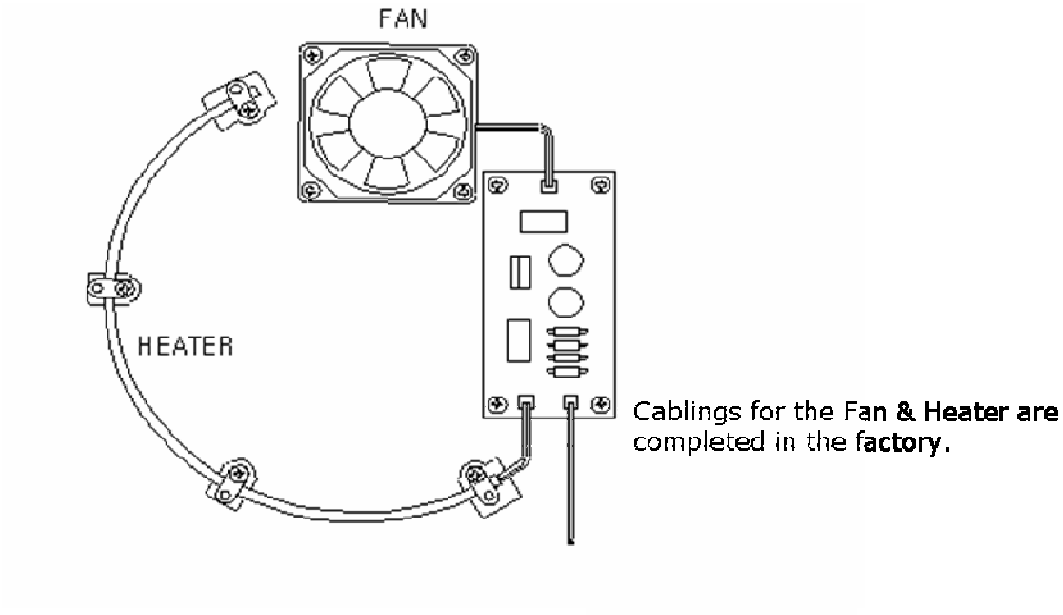
F-1. Install a pole mount adaptor on the pole.



Installation of Pole Mount Adaptor

F-2. Use wall or gooseneck mount bracket to finish installation

G. Fan & Heater



H. Specifications and Dimension of Outdoor Housing

H-1. Specifications

Specification	Description
Heater control temperature	On: below 10□, Off: over 15□
Fan control temperature	On: over 45□, Off: below 35□
Operating temperature	-40℃ ~ +60□
Operating humidity	Below 90%
Waterproof Capacity	IP 66
Construction	Poly Carbonate (Bubble), Aluminum (Body)
Dimensions	253Ø(diameter) x 307mm(Height) x 190Ø(Bubble)
Power Consumption	18W Max (With Camera: 43W Max)
Power Supply	AC 24V 1A, 60 / 50Hz (AC24V 2A with camera)
Weight	3.4kg (With Camera : 5.3kg)